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| 10/065,768      | 11/18/2002  | Ming-Hung Lee        | MTKP0007USA         | 9211             |

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NORTH AMERICA INTERNATIONAL PATENT OFFICE (NAIPC)

P.O. BOX 506

MERRIFIELD, VA 22116

EXAMINER

AGUSTIN, PETER VINCENT

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2652

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/065,768

Applicant(s)

LEE ET AL.

Examiner

Peter Vincent Agustin

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-12 are now pending.

#### ***Drawings***

2. Replacement drawings were received on May 19, 2005. These drawings are acceptable.

#### ***Specification***

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors, e.g.,

Paragraph 6, line 3: "10stores" should be --10 stores--.

Paragraph 9, line 2: "onto an the" should be --onto the--.

Paragraph 15, line 4: "10then" should be --10 then--.

Paragraph 15, line 6: "DT.The" should be --DT. The--.

Paragraph 16, line 3: "DA(n)of" should be --DA(n) of--.

Paragraph 44, line 9: "Z1care" should be --Z1 are--.

Claim 5, line 2: "When" should be --when--.

Applicants' cooperation is requested in correcting any errors of which applicant may become aware in the specification.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2652

5. Claims 1-3 & 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by the Applicants' admitted prior art (please refer to the Specification filed November 18, 2002 and the Drawings filed January 17, 2003).

In regard to claim 1, the Applicants' admitted prior art discloses a method for using an optical disc drive (Figure 1, element 10) to manage data on an optical disc (22), the optical disc comprising a defect table (Figure 2A: DT) and a plurality of data blocks (Bd) for recording data, each of the data blocks having a corresponding unique address, the defect table comprising at least one entry (Figure 2B: E), each of the entries being used to record the address (e.g., DN1) of a corresponding defective data block on the optical disc, and the optical disc drive comprising a memory (Figure 1, element 20), the memory comprising a plurality of memory areas (see Figure 3), each of the memory areas being used to store one of the entries, wherein when the optical disc drive writes data onto the optical disc, the optical disc drive is capable of detecting the defective data blocks of the optical disc, the method comprising: allocating at least one first memory area (Figure 4B, element 20: segments labeled "U, DN6, AN6" thru "U, DN12, AN12") in the memory, and storing a corresponding entry of the defect table in each of the first memory areas; storing the address (DN5) of a first data block of the optical disc in an original second memory area (segment labeled "U, DN5, AN13") of the memory before data is written in the first data block if the first data block is defective and if there is at least one address (e.g., DN6, DN7, DN8, etc.), which is greater than the address of the first data block, recorded in the defect table, wherein the second memory area is different from the first memory area; and during a data write-in operation, preserving an initial order of the first memory areas in the memory when the address (DN5) of the first data block is stored into the second memory area (see Figures 4A-4C,

Art Unit: 2652

which show that the initial order of the first memory areas (segments labeled “U, DN6, AN6” thru “U, DN12, AN12”) are preserved all throughout).

In regard to claim 2, the Applicants’ admitted prior art discloses that when the address (DN5) of the first data block is stored in the second memory area, a number of times needed to modify the entries (e.g., once modified as shown in Figures 4B & 4C) stored in the first memory areas is less than a number of entries in the defect table having addresses greater than the address of the first data block (Figures 4A-4C show at least 5 entries having addresses greater than DN5).

In regard to claim 3, the Applicants’ admitted prior art discloses storing the address of a second data block of the optical disc in another second memory area when the second data block is defective (suggested by paragraph 24, lines 1-3: “upon detecting a new defective data block” and “re-shuffling”).

In regard to claim 5, the Applicants’ admitted prior art discloses when the optical disc drive stops writing data onto the optical disc, storing an address stored in a first memory area into another memory area of the memory if the address stored in a first data block stored in the second memory area is less than the address stored in the first memory area (note the change in arrangement of entries in Figures 4B & 4C).

In regard to claim 6, the Applicants’ admitted prior art discloses updating the defect table according to the addresses stored in the first memory areas and the second memory area, and writing the updated defect table in the optical disc before the optical disc drive stops writing data onto the optical disc (see paragraph 23).

In regard to claim 7, the Applicants' admitted prior art discloses that the data blocks and the defect table are established according to a specification of CD-MRW (Compact Disc-Mount Rainier reWritable) (see paragraph 7).

In regard to claim 8, the Applicants' admitted prior art discloses a plurality of spare data blocks (Figure 2A: SA(1), SA(2), etc.) for recording data, which are prepared for the defective data areas, each of the spare data blocks has a corresponding address, and each of the entries of the defect table is also used to record the address of a corresponding spare data block (see Figure 2B: DT).

6. Claims 1-6, 8, 9 & 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Bish et al. (US 5,235,585).

In regard to claim 1, Bish et al. disclose a method for using an optical disc drive (Figure 1) to manage data on an optical disc (11), the optical disc comprising a defect table (Figure 3) and a plurality of data blocks (see Figure 5) for recording data, each of the data blocks having a corresponding unique address, the defect table comprising at least one entry, each of the entries being used to record the address (see first two columns of Figure 3) of a corresponding defective data block on the optical disc, and the optical disc drive comprising a memory (Figure 1, element 8), the memory comprising a plurality of memory areas, each of the memory areas being used to store one of the entries, wherein when the optical disc drive writes data onto the optical disc, the optical disc drive is capable of detecting the defective data blocks of the optical disc, the method comprising: allocating at least one first memory area in the memory, and storing a corresponding entry of the defect table in each of the first memory areas (column 7, lines 9-13); storing the address (e.g., track 3, sector 5 of Figure 3) of a first data block of the optical disc in an original

Art Unit: 2652

second memory area (area where track 3, sector 5 is stored) of the memory before data is written in the first data block if the first data block is defective and if there is at least one address (e.g., track 5, sector 10), which is greater than the address of the first data block, recorded in the defect table, wherein the second memory area is different from the first memory area; and during a data write-in operation, preserving an initial order of the first memory areas in the memory when the address of the first data block is stored into the second memory area (column 6, lines 25-30: “each time a replacement sector is added, the replacement sector list is updated so that the replacement sectors will be listed in ascending order according to track and sector numbers”).

In regard to claim 2, Bish et al. disclose that when the address (Figure 3, track 3, sector 5) of the first data block is stored in the second memory area (area where track 3, sector 5 is stored), a number of times needed to modify the entries (e.g., once modified as suggested by column 6, lines 27-30) stored in the first memory areas is less than a number of entries in the defect table having addresses greater than the address of the first data block (Figure 3 shows at least 11 entries having addresses greater than track 3, sector 5).

In regard to claim 3, Bish et al. disclose storing the address (e.g., track 5, sector 10 of Figure 3) of a second data block of the optical disc in another second memory area when the second data block is defective.

In regard to claim 4, Bish et al. disclose restoring the address of the first data block in another second memory area and releasing the original second memory area if the address of the second data block is less than the address of the first data block (this is accomplished by the “sorting” recited on the abstract, lines 2-5; column 6, lines 27-30; column 7, lines 20-22; and column 10, lines 57-60).

In regard to claim 5, Bish et al. disclose when the optical disc drive stops writing data onto the optical disc, storing an address stored in a first memory area into another memory area of the memory if the address stored in a first data block stored in the second memory area is less than the address stored in the first memory area (see Figure 3; also note that this is accomplished by the “sorting” recited on the abstract, lines 2-5; column 6, lines 27-30; column 7, lines 20-22; and column 10, lines 57-60).

In regard to claim 6, Bish et al. disclose updating the defect table according to the addresses stored in the first memory areas and the second memory area, and writing the updated defect table in the optical disc before the optical disc drive stops writing data onto the optical disc (column 5, lines 57-61; column 7, lines 16-18).

In regard to claim 8, Bish et al. disclose a plurality of spare data blocks for recording data, which are prepared for the defective data areas, each of the spare data blocks has a corresponding address, and each of the entries of the defect table is also used to record the address of a corresponding spare data block (see last two columns of Figure 3).

In regard to claim 9, Bish et al. disclose a method for using an optical disc drive (Figure 1) to manage data on an optical disc (11), the optical disc comprising a defect table (Figure 3) and a plurality of data blocks (see Figure 5) for recording data, each of the data blocks having a corresponding unique address, the defect table comprising at least one entry, each of the entries being used to record the address (see first two columns of Figure 3) of a corresponding defective data block on the optical disc, and the optical disc drive comprising a memory (Figure 1, element 8), the memory comprising a first memory area and a second memory area capable of storing a plurality of the entries, wherein when the optical disc drive writes data onto the optical disc, the



Art Unit: 2652

optical disc drive is capable of detecting the defective data blocks of the optical disc, the method comprising: storing the defect table in the first memory area (column 7, lines 9-13); storing the address (e.g., track 3, sector 5 of Figure 3) of a first data block in the second memory area (area where track 3, sector 5 is stored) before data is written in the first data block if the first data block is defective; storing the address (e.g., track 5, sector 10) of a second data block in the second memory area (area where track 5, sector 10 is stored) and sorting the addresses both of the first data block and the second data block if the second data block is defective (abstract, lines 2-5; column 6, lines 27-30; column 7, lines 20-22; and column 10, lines 57-60); and when the optical disc drive stops writing data onto the optical disc, sorting the addresses both of the first data block and the second data block according to the sorting order of the defect table stored in the first memory area (abstract, lines 2-5; column 6, lines 27-30; column 7, lines 20-22; and column 10, lines 57-60), and updating the defect table according to the sorted address stored in the memory (column 5, lines 57-61; column 7, lines 16-18).

In regard to claim 11, Bish et al. disclose a method for using an optical disc drive (Figure 1) to manage data on an optical disc (11), the optical disc comprising a defect table (Figure 3) and a plurality of data blocks (see Figure 5) for recording data, each of the data blocks having a corresponding unique address, the defect table at least recording the address of a corresponding defective data block on the optical disc (see first two columns of Figure 3), and the optical disc drive comprising a memory (Figure 1, element 8) having a first memory area and a second memory area, wherein when the optical disc drive writes data onto the optical disc, the optical disc drive is capable of detecting the defective data blocks of the optical disc, the method comprising: storing the defect table in the first memory area (column 7, lines 9-13); storing the

Art Unit: 2652

addresses of the defective data blocks (see first two columns of Figure 3), which are detected by the optical disc drive while the optical disc drive writes data onto the optical disc, in the second memory area, and sorting the addresses stored in the second memory area (abstract, lines 2-5; column 6, lines 27-30; column 7, lines 20-22; and column 10, lines 57-60); and when the optical disc drive stops writing data onto the optical disc, combining the addresses of the defect table stored in the first memory area with the addresses stored in the second memory area so as to update the defect table, and writing the updated defect table in the optical disc (column 5, lines 57-61; column 7, lines 16-18).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 7, 10 & 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bish et al. in view of the Applicants' admitted prior art.

For a description of Bish et al., see the rejection above. However, in regard to claims 7, 10 & 12, Bish et al. do not disclose that the data blocks and the defect table are established according to a specification of CD-MRW (Compact Disc-Mount Rainier reWritable).

The Applicants' admitted prior art discloses data blocks and a defect table established according to a specification of CD-MRW (see paragraph 7). It would have been obvious to one of ordinary skill in the art at the time of the invention by the Applicants to have established the data blocks and the defect table of Bish et al. according to a specification of CD-MRW as

suggested by the Applicants' admitted prior art, the motivation being to minimize the effects of dust or scratch marks, thereby improving the reliability of a re-writable optical disc.

*Response to Arguments*

9. Applicants' arguments filed May 19, 2005 have been fully considered but they are not persuasive.

a. The Applicants argue on page 12, first paragraph that the Applicants' admitted prior art fails to teach or suggest the claimed feature: "during a data write-in operation, preserving an initial order of the first memory areas in the memory when the address of the first data block is stored into the second memory area". The Examiner disagrees. As noted in the 102(b) rejection above, the claimed address of a first data block corresponds to "DN5"; the claimed "first memory area" is read to correspond to the area in Figure 4B, element 20 of the Applicants' admitted prior art where the segments labeled "U, DN6, AN6" thru "U, DN12, AN12" are located; and the claimed "second memory area" is read to correspond to at least the area where the segment labeled "U, DN5, AN13" is stored. Figures 4A-4C show that the initial order of the first memory areas, i.e., the segments labeled "U, DN6, AN6" thru "U, DN12, AN12", are preserved all throughout.

b. The Applicants argue on page 13, third paragraph that Bish et al. fails to teach or suggest the claimed feature: "when the optical disc drive stops writing data onto the optical disc, sorting the addresses both of the first data block and the second data block according to the sorting order of the defect table stored in the first memory area, and updating the defect table according to the sorted address stored in the memory". The Examiner disagrees. As noted in the 102(b) rejection above, the abstract, lines 2-5;

column 6, lines 27-30; column 7, lines 20-22; and column 10, lines 57-60 of Bish et al. teach the claimed “sorting”; and column 5, lines 57-61 & column 7, lines 16-18 teach the claimed “updating”. It should be noted that that the claimed “sorting” and “updating” are performed during a period when a write mode of the optical disc drive is not operational, for example, “at initialization” recited in column 7, line 21. Note that initialization is performed every time a disc is inserted or before writing is resumed; therefore, the claimed “sorting” and “updating” are performed “when the optical disc drive stops writing data”, as claimed.

c. The Applicants argue on page 13, last paragraph that Bish et al. fails to teach or suggest the claimed feature: “when the optical disc drive stops writing data onto the optical disc, combining the addresses of the defect table stored in the first memory area with the addresses stored in the second memory area so as to update the defect table, and writing the updated defect table in the optical disc”. The Examiner disagrees for the same reasons noted in item 9b above.

### *Conclusion*

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 2652

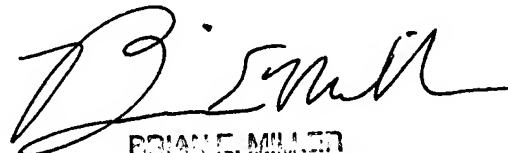
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Vincent Agustin whose telephone number is 571-272-7567. The examiner can normally be reached on Monday-Friday 9:30-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Peter Vincent Agustin  
Art Unit 2652



BRIAN E. MILLER  
PRINCIPAL EXAMINER